

SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> POLYNUCLEOTIDE ENCODING A NOVEL HUMAN POTASSIUM CHANNEL BETA-SUBUNIT, K+betaM6, EXPRESSED HIGHLY IN THE SMALL INTESTINE

<130> D0121 NP

<150> US 60/270,132

<151> 2001-02-21

<150> US 60/278,953

<151> 2001-03-27

<160> 74

<170> PatentIn version 3.0

<210> 1

<211> 2052

<212> DNA

<213> homo sapiens

<220>

<221> CDS

<222> (121)..(1095)

<400> 1

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tgcagctcct gagtgcagcg cggtctcctg ccactgtccc ggcccggcca cctctctgtc      120
atg gct ctg gcg gac agc aca cgt gga tta ccc aac ggg ggc ggc ggc      168
Met Ala Leu Ala Asp Ser Thr Arg Gly Leu Pro Asn Gly Gly Gly Gly
1          5          10          15

ggg ggc ggc agt ggc tcc tcg tcg tcc tcc gcg gag cca ccg ctc ttc      216
Gly Gly Gly Ser Gly Ser Ser Ser Ser Ala Glu Pro Pro Leu Phe
          20          25          30

ccc gac atc gtg gag ctg aac gtg ggg ggc cag gtg tac gtg acc cgg      264
Pro Asp Ile Val Glu Leu Asn Val Gly Gly Gln Val Tyr Val Thr Arg
          35          40          45

cgc tgc acg gtg gtg tcg gtg ccc gac tcg ctg ctc tgg cgc atg ttc      312
Arg Cys Thr Val Val Ser Val Pro Asp Ser Leu Leu Trp Arg Met Phe
          50          55          60

acg cag cag cag ccg cag gag ctg gcc cgg gac agc aaa ggc cgc ttc      360
Thr Gln Gln Gln Pro Gln Glu Leu Ala Arg Asp Ser Lys Gly Arg Phe
65          70          75          80

ttt ctg gac cgg gac ggc ttc ctc ttc cgc tac atc ctg gat tac ctg      408
Phe Leu Asp Arg Asp Gly Phe Leu Phe Arg Tyr Ile Leu Asp Tyr Leu
          85          90          95

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cgg gac ttg cag ctc gtg ctg ccc gac tac ttc ccc gag cgc agc cgg Arg Asp Leu Gln Leu Val Leu Pro Asp Tyr Phe Pro Glu Arg Ser Arg 100 105 110	456
ctg cag cgc gag gcc gag tac ttc gag ctg cca gag ctc gtg cgc cgc Leu Gln Arg Glu Ala Glu Tyr Phe Glu Leu Pro Glu Leu Val Arg Arg 115 120 125	504
ctc ggg gcg ccc cag cag ccc ggc ccg ggg ccg ccg ccc tcg cgg cgc Leu Gly Ala Pro Gln Gln Pro Gly Pro Gly Pro Pro Ser Arg Arg 130 135 140	552
ggg gtg cac aag gag ggc tcg ctg ggt gac gag ctg ctg ccg ctt ggc Gly Val His Lys Glu Gly Ser Leu Gly Asp Glu Leu Leu Pro Leu Gly 145 150 155 160	600
tac tcg gag ccc gaa cag cag gag ggc gcc tct gcc ggg gcg ccg tcg Tyr Ser Glu Pro Glu Gln Gln Glu Gly Ala Ser Ala Gly Ala Pro Ser 165 170 175	648
ccc acg ctg gag ctg gct agc cgc agt ccg tcc ggg ggc gcg gcg ggc Pro Thr Leu Glu Leu Ala Ser Arg Ser Pro Ser Gly Gly Ala Ala Gly 180 185 190	696
ccg ctg ctc acg ccg tcc cag tcg ctg gac ggc agc cgg cgc tcg ggc Pro Leu Leu Thr Pro Ser Gln Ser Leu Asp Gly Ser Arg Arg Ser Gly 195 200 205	744
tac atc acc atc ggc tac cgc ggc tcc tac acc atc ggg cgg gac gcg Tyr Ile Thr Ile Gly Tyr Arg Gly Ser Tyr Thr Ile Gly Arg Asp Ala 210 215 220	792
cag gcg gac gcc aag ttc cgg cga gtg gcg cgc atc acc gtt tgc gga Gln Ala Asp Ala Lys Phe Arg Arg Val Ala Arg Ile Thr Val Cys Gly 225 230 235 240	840
aag acg tcg ctg gcc aag gag gtg ttt ggg gac acc ctg aac gaa agc Lys Thr Ser Leu Ala Lys Glu Val Phe Gly Asp Thr Leu Asn Glu Ser 245 250 255	888
cgg gac ccc gac cgt ccc ccg gag cgc tac acc tcg cgc tat tac ctc Arg Asp Pro Asp Arg Pro Pro Glu Arg Tyr Thr Ser Arg Tyr Tyr Leu 260 265 270	936
aag ttc aac ttc ctg gag cag gcc ttc gac aag ctg tcc gag tcg ggc Lys Phe Asn Phe Leu Glu Gln Ala Phe Asp Lys Leu Ser Glu Ser Gly 275 280 285	984
ttc cac atg gtg gcg tgc agc tcc acg ggc acc tgc gcc ttt gcc agc Phe His Met Val Ala Cys Ser Ser Thr Gly Thr Cys Ala Phe Ala Ser 290 295 300	1032
agc acc gac cag agc gag gac aag atc tgg acc agc tac acc gag tac Ser Thr Asp Gln Ser Glu Asp Lys Ile Trp Thr Ser Tyr Thr Glu Tyr 305 310 315 320	1080
gtc ttc tgc agg gag tgagctcccc agacccctc gccactccag cgcccagttcc	1135

Val Phe Cys Arg Glu
325

ttctcctgcc cgagagatga ttacagagcc tcttgtccca ctttgtccc ctggetgctg 1195
ccctccatt ctccccctcc agtagtagct gggtagagacc tgtccgccca cttccctcc 1255
actacagaac ctgcagccgc aaatcctctg ggctgcttcg tcttctttgg acctcctgaa 1315
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<210> 2
<211> 325
<212> PRT
<213> homo sapiens

<400> 2

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1 5 10 15

Gly Gly Gly Ser Gly Ser Ser Ser Ser Ser Ala Glu Pro Pro Leu Phe
20 25 30

Pro Asp Ile Val Glu Leu Asn Val Gly Gly Gln Val Tyr Val Thr Arg
35 40 45

Arg Cys Thr Val Val Ser Val Pro Asp Ser Leu Leu Trp Arg Met Phe
50 55 60

AUGUST 9, 1968

Thr Gln Gln Gln Pro Gln Glu Leu Ala Arg Asp Ser Lys Gly Arg Phe
65 70 75 80

Phe Leu Asp Arg Asp Gly Phe Leu Phe Arg Tyr Ile Leu Asp Tyr Leu
85 90 95

Arg Asp Leu Gln Leu Val Leu Pro Asp Tyr Phe Pro Glu Arg Ser Arg
100 105 110

Leu Gln Arg Glu Ala Glu Tyr Phe Glu Leu Pro Glu Leu Val Arg Arg
115 120 125

Leu Gly Ala Pro Gln Gln Pro Gly Pro Gly Pro Pro Pro Ser Arg Arg
130 135 140

Gly Val His Lys Glu Gly Ser Leu Gly Asp Glu Leu Leu Pro Leu Gly
145 150 155 160

Tyr Ser Glu Pro Glu Gln Gln Glu Gly Ala Ser Ala Gly Ala Pro Ser
165 170 175

Pro Thr Leu Glu Leu Ala Ser Arg Ser Pro Ser Gly Gly Ala Ala Gly
180 185 190

Pro Leu Leu Thr Pro Ser Gln Ser Leu Asp Gly Ser Arg Arg Ser Gly
195 200 205

Tyr Ile Thr Ile Gly Tyr Arg Gly Ser Tyr Thr Ile Gly Arg Asp Ala
210 215 220

Gln Ala Asp Ala Lys Phe Arg Arg Val Ala Arg Ile Thr Val Cys Gly
225 230 235 240

Lys Thr Ser Leu Ala Lys Glu Val Phe Gly Asp Thr Leu Asn Glu Ser
245 250 255

Arg Asp Pro Asp Arg Pro Pro Glu Arg Tyr Thr Ser Arg Tyr Tyr Leu
260 265 270

Lys Phe Asn Phe Leu Glu Gln Ala Phe Asp Lys Leu Ser Glu Ser Gly
275 280 285

Phe His Met Val Ala Cys Ser Ser Thr Gly Thr Cys Ala Phe Ala Ser
 290 295 300

Ser Thr Asp Gln Ser Glu Asp Lys Ile Trp Thr Ser Tyr Thr Glu Tyr
 305 310 315 320

Val Phe Cys Arg Glu
 325

<210> 3

<211> 228

<212> PRT

<213> Drosophila melanogaster

<400> 3

Met Pro Glu Ile Ile Glu Leu Asn Val Gly Gly Val Ser Tyr Thr Thr
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Thr Leu Ala Thr Leu Leu Gln Asp Lys Ser Thr Leu Leu Ala Glu Leu
 20 25 30

Phe Gly Glu Gly Arg Asp Ser Leu Ala Lys Asp Ser Lys Gly Arg Tyr
 35 40 45

Phe Leu Asp Arg Asp Gly Val Leu Phe Arg Tyr Ile Leu Asp Phe Leu
 50 55 60

Arg Asp Lys Ala Leu His Leu Pro Glu Gly Phe Arg Glu Arg Gln Arg
 65 70 75 80

Leu Leu Arg Glu Ala Glu His Phe Lys Leu Thr Ala Met Leu Glu Cys
 85 90 95

Ile Arg Ser Glu Arg Asp Ala Arg Pro Pro Gly Cys Ile Thr Ile Gly
 100 105 110

Tyr Arg Gly Ser Phe Gln Phe Gly Lys Asp Gly Leu Ala Asp Val Lys
 115 120 125

Phe Arg Lys Leu Ser Arg Ile Leu Val Cys Gly Arg Val Ala Gln Cys
 130 135 140

Arg Glu Val Phe Gly Asp Thr Leu Asn Glu Ser Arg Asp Pro Asp His
 145 150 155 160

Gly Gly Thr Asp Arg Tyr Thr Ser Arg Phe Phe Leu Lys His Cys Tyr
 165 170 175

Ile Glu Gln Ala Phe Asp Asn Leu His Asp His Gly Tyr Arg Met Ala
 180 185 190

Gly Ser Cys Gly Ser Gly Thr Ala Gly Ser Ala Ala Glu Pro Lys Pro

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195                200                205
Gly Val Asp Thr Glu Glu Asn Arg Trp Asn His Tyr Asn Glu Phe Val
210                215                220

Phe Ile Arg Asp
225

<210> 4
<211> 435
<212> PRT
<213> Homo sapiens

<400> 4

Gln Gln Gln Lys Lys Gly Thr Met Ala Leu Ser Gly Asn Cys Ser Arg
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Tyr Tyr Pro Arg Glu Gln Gly Ser Ala Val Pro Asn Ser Phe Pro Glu
20          25          30

Val Val Glu Leu Asn Val Gly Gly Gln Val Tyr Phe Thr Arg His Ser
35          40          45

Thr Leu Ile Ser Ile Pro His Ser Leu Leu Trp Lys Met Phe Ser Pro
50          55          60

Lys Arg Asp Thr Ala Asn Asp Leu Ala Lys Asp Ser Lys Gly Arg Phe
65          70          75          80

Phe Ile Asp Arg Asp Gly Phe Leu Phe Arg Tyr Ile Leu Asp Tyr Leu
85          90          95

Arg Asp Arg Gln Val Val Leu Pro Asp His Phe Pro Glu Lys Gly Arg
100         105         110

Leu Lys Arg Glu Ala Glu Tyr Phe Gln Leu Pro Asp Leu Val Lys Leu
115         120         125

Leu Thr Pro Asp Glu Ile Lys Gln Ser Pro Asp Glu Phe Cys His Ser
130         135         140

Asp Phe Glu Asp Ala Ser Gln Gly Ser Asp Thr Arg Ile Cys Pro Pro
145         150         155         160

Ser Ser Leu Leu Pro Ala Asp Arg Lys Trp Gly Phe Ile Thr Val Gly
165         170         175

Tyr Arg Gly Ser Cys Thr Leu Gly Arg Glu Gly Gln Ala Asp Ala Lys
180         185         190

Phe Arg Arg Val Pro Arg Ile Leu Val Cys Gly Arg Ile Ser Leu Ala
195         200         205

Lys Glu Val Phe Gly Glu Thr Leu Asn Glu Ser Arg Asp Pro Asp Arg
210         215         220

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Ala Pro Glu Arg Tyr Thr Ser Arg Phe Tyr Leu Lys Phe Lys His Leu
 225 230 235 240
 Glu Arg Ala Phe Asp Met Leu Ser Glu Cys Gly Phe His Met Val Ala
 245 250 255
 Cys Asn Ser Ser Val Thr Ala Ser Phe Ile Asn Gln Tyr Thr Asp Asp
 260 265 270
 Lys Ile Trp Ser Ser Tyr Thr Glu Tyr Val Phe Tyr Arg Glu Pro Ser
 275 280 285
 Arg Trp Ser Pro Ser His Cys Asp Cys Cys Cys Lys Asn Gly Lys Gly
 290 295 300
 Asp Lys Glu Gly Glu Ser Gly Thr Ser Cys Asn Asp Leu Ser Thr Ser
 305 310 315 320
 Ser Cys Asp Ser Gln Ser Glu Ala Ser Ser Pro Gln Glu Thr Val Ile
 325 330 335
 Cys Gly Pro Val Thr Arg Gln Thr Asn Ile Gln Thr Leu Asp Arg Pro
 340 345 350
 Ile Lys Lys Gly Pro Val Gln Leu Ile Gln Gln Ser Glu Met Arg Arg
 355 360 365
 Lys Ser Asp Leu Leu Arg Thr Leu Thr Ser Gly Ser Arg Glu Ser Asn
 370 375 380
 Met Ser Ser Lys Lys Lys Ala Val Lys Glu Lys Leu Ser Ile Glu Glu
 385 390 395 400
 Glu Leu Glu Lys Cys Ile Gln Asp Phe Leu Lys Ile Lys Ile Pro Asp
 405 410 415
 Arg Phe Pro Glu Arg Lys His Pro Trp Gln Ser Glu Leu Leu Arg Lys
 420 425 430
 Tyr His Leu
 435

<210> 5
 <211> 140
 <212> PRT
 <213> Caenorhabditis elegans
 <400> 5

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 Tyr Thr Thr Thr Arg Ser Thr Leu Ser Lys Glu Thr Asp Thr Leu Leu
 20 25 30
 Ala Asn Ile Ala Ser Gly Ser Leu Ser Glu Asp Glu Gln Ala Asn Val
 35 40 45

Val Thr Leu Pro Asp Gly Thr Leu Phe Val Asp Arg Asp Gly Pro Leu
 50 55 60
 Phe Ala Tyr Val Leu His Phe Leu Arg Thr Asp Lys Leu Ser Leu Pro
 65 70 75 80
 Glu Gln Phe Arg Glu Val Ala Arg Leu Lys Asp Glu Ala Asp Phe Tyr
 85 90 95
 Arg Leu Glu Arg Phe Ser Thr Leu Leu Ser Asn Ala Ser Ser Ile Ser
 100 105 110
 Pro Arg Pro Arg Thr Ala Asn Gly Tyr Asn Thr Ile Thr Ser Gly Ala
 115 120 125
 Glu Thr Gly Gly Tyr Ile Thr Leu Gly Tyr Arg Gly
 130 135 140

<210> 6
 <211> 256
 <212> PRT
 <213> Homo sapiens
 <220>
 <221> UNSURE
 <222> (15)..(15)
 <223> wherein "X" is equal to any amino acid.

<400> 6

Met Ser Arg Pro Leu Ile Thr Arg Ser Pro Ala Ser Pro Leu Xaa Asn
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 Gln Gly Ile Pro Thr Pro Ala Gln Leu Thr Lys Ser Asn Ala Pro Val
 20 25 30
 His Ile Asp Val Gly Gly His Met Tyr Thr Ser Ser Leu Ala Thr Leu
 35 40 45
 Thr Lys Tyr Pro Glu Ser Arg Ile Gly Arg Leu Phe Asp Gly Thr Glu
 50 55 60
 Pro Ile Val Leu Asp Ser Leu Lys Gln His Tyr Phe Ile Asp Arg Asp
 65 70 75 80
 Gly Gln Met Phe Arg Tyr Ile Leu Asn Phe Leu Arg Thr Ser Lys Leu
 85 90 95
 Leu Ile Pro Asp Asp Phe Lys Asp Tyr Thr Leu Leu Tyr Glu Glu Ala
 100 105 110
 Lys Tyr Phe Gln Leu Gln Pro Met Leu Leu Glu Met Glu Arg Trp Lys
 115 120 125
 Gln Asp Arg Glu Thr Gly Arg Phe Ser Arg Pro Cys Glu Cys Leu Val

130					135					140					
Val 145	Arg	Val	Ala	Pro	Asp 150	Leu	Gly	Glu	Arg	Ile 155	Thr	Leu	Ser	Gly	Asp 160
Lys	Ser	Leu	Ile	Glu 165	Glu	Val	Phe	Pro	Glu 170	Ile	Gly	Asp	Val	Met 175	Cys
Asn	Ser	Val	Asn 180	Ala	Gly	Trp	Asn	His 185	Asp	Ser	Thr	His	Val 190	Ile	Arg
Phe	Pro	Leu 195	Asn	Gly	Tyr	Cys	His 200	Leu	Asn	Ser	Val	Gln 205	Val	Leu	Glu
Arg	Leu 210	Gln	Gln	Arg	Gly	Phe 215	Glu	Ile	Val	Gly	Ser 220	Cys	Gly	Gly	Gly
Val 225	Asp	Ser	Ser	Gln	Phe 230	Ser	Glu	Tyr	Val	Leu 235	Arg	Arg	Glu	Leu	Arg 240
Arg	Thr	Pro	Arg	Val 245	Pro	Ser	Val	Ile	Arg 250	Ile	Lys	Gln	Glu	Pro 255	Leu

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<210> 7
<211> 237
<212> PRT
<213> Homo sapiens
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<400> 7

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Asn	Val	Gly	Gly 20	His	Leu	Tyr	Thr	Thr 25	Ser	Leu	Thr	Thr	Leu 30	Thr	Arg
Tyr	Pro	Asp 35	Ser	Met	Leu	Gly	Ala 40	Met	Phe	Gly	Gly	Asp 45	Phe	Pro	Thr
Ala	Arg 50	Asp	Pro	Gln	Gly	Asn 55	Tyr	Phe	Ile	Asp	Arg 60	Asp	Gly	Pro	Leu
Phe 65	Arg	Tyr	Val	Leu	Asn 70	Phe	Leu	Arg	Thr	Ser 75	Glu	Leu	Thr	Leu	Pro 80
Leu	Asp	Phe	Lys 85	Glu	Phe	Asp	Leu	Leu 90	Arg	Lys	Glu	Ala	Asp	Phe 95	Tyr
Gln	Ile	Glu	Pro 100	Leu	Ile	Gln	Cys	Leu 105	Asn	Asp	Pro	Lys	Pro 110	Leu	Tyr
Pro	Met	Asp 115	Thr	Phe	Glu	Glu	Val 120	Val	Glu	Leu	Ser	Ser 125	Thr	Arg	Lys
Leu	Ser 130	Lys	Tyr	Ser	Asn	Pro 135	Val	Ala	Val	Ile	Ile 140	Thr	Gln	Leu	Thr

Ile Thr Thr Lys Val His Ser Leu Leu Glu Gly Ile Ser Asn Tyr Phe
 145 150 155 160
 Thr Lys Trp Asn Lys His Met Met Asp Thr Arg Asp Cys Gln Val Ser
 165 170 175
 Phe Thr Phe Gly Pro Cys Asp Tyr His Gln Glu Val Ser Leu Arg Val
 180 185 190
 His Leu Met Glu Tyr Ile Thr Lys Gln Gly Phe Thr Ile Arg Asn Thr
 195 200 205
 Arg Val His His Met Ser Glu Arg Ala Asn Glu Asn Thr Val Glu His
 210 215 220
 Asn Trp Thr Phe Cys Arg Leu Ala Arg Lys Thr Asp Asp
 225 230 235

<210> 8
 <211> 688
 <212> DNA
 <213> homo sapiens
 <220>
 <221> misc_feature
 <223> wherein "N" is equal to "A", "C", "G" or "T".

<400> 8
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 gagtgcagcg cggcttcctg ccaactgtccc ggcccgcca cctctctgtc atggctctgg 120
 cggacagcac acgtggatta cccaannnnn nnnnnnnnnn nnnnnnnagt ggctcctcgt 180
 cgtcctccgc ggagccaccg ctcttccccg acatcggtga gctgaacgtg gggggccagg 240
 tgtacgtgac ccggcgctgc acggtggtgt cggtgcccga ctcgctgctc tggcgcatgt 300
 tcacgcagca gcagccgcag gagctggccc gggacagcaa aggccgcttc tttctggacc 360
 gggacggctt cctcttccgc tacatcctgg attacctgcg ggacttgag ctcgtgctgc 420
 ccgactactt ccccgagcgc agccggctgc agcgcgaggc cgagtacttc gagctgccag 480
 agctcgtnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540
 nnnnnntgca caaggagggc tcgctgggtg acgagctgct gccgcttggc tactcggagc 600
 ccgaacagca ggagggcgcc tctgccgggg cgccgtcgcc cacgctggag ctggctagcc 660
 gcagtccgtn nnnnnnnnnn nnnnnnnn 688

<210> 9
 <211> 237
 <212> PRT

10030933 025102

<213> homo sapiens

<400> 9

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1 5 10 15

Asn Val Gly Gly His Leu Tyr Thr Thr Ser Leu Thr Thr Leu Thr Arg
20 25 30

Tyr Pro Asp Ser Met Leu Gly Ala Met Phe Gly Gly Asp Phe Pro Thr
35 40 45

Ala Arg Asp Pro Gln Gly Asn Tyr Phe Ile Asp Arg Asp Gly Pro Leu
50 55 60

Phe Arg Tyr Val Leu Asn Phe Leu Arg Thr Ser Glu Leu Thr Leu Pro
65 70 75 80

Leu Asp Phe Lys Glu Phe Asp Leu Leu Arg Lys Glu Ala Asp Phe Tyr
85 90 95

Gln Ile Glu Pro Leu Ile Gln Cys Leu Asn Asp Pro Lys Pro Leu Tyr
100 105 110

Pro Met Asp Thr Phe Glu Glu Val Val Glu Leu Ser Ser Thr Arg Lys
115 120 125

Leu Ser Lys Tyr Ser Asn Pro Val Ala Val Ile Ile Thr Gln Leu Thr
130 135 140

Ile Thr Thr Lys Val His Ser Leu Leu Glu Gly Ile Ser Asn Tyr Phe
145 150 155 160

Thr Lys Trp Asn Lys His Met Met Asp Thr Arg Asp Cys Gln Val Ser
165 170 175

Phe Thr Phe Gly Pro Cys Asp Tyr His Gln Glu Val Ser Leu Arg Val
180 185 190

His Leu Met Glu Tyr Ile Thr Lys Gln Gly Phe Thr Ile Arg Asn Thr
195 200 205

Arg Val His His Met Ser Glu Arg Ala Asn Glu Asn Thr Val Glu His
210 215 220

Asn Trp Thr Phe Cys Arg Leu Ala Arg Lys Thr Asp Asp
225 230 235

<210> 10

$\langle 211 \rangle$	80
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<212> DNA

<213> homo sapiens

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60

aggatgtagc ggaagaggaa

80

<210> 11
 <211> 19
 <212> DNA
 <213> homo sapiens

<400> 11
 ctggattacc tgcgggact

19

<210> 12
 <211> 20
 <212> DNA
 <213> homo sapiens

<400> 12
 agctctggca gctcgaagta

20

<210> 13
 <211> 101
 <212> PRT
 <213> homo sapiens

<400> 13

Asp Ile Val Glu Leu Asn Val Gly Gly Gln Val Tyr Val Thr Arg Arg
 1 5 10 15

Cys Thr Val Val Ser Val Pro Asp Ser Leu Leu Trp Arg Met Phe Thr
 20 25 30

Gln Gln Gln Pro Gln Glu Leu Ala Arg Asp Ser Lys Gly Arg Phe Phe
 35 40 45

Leu Asp Arg Asp Gly Phe Leu Phe Arg Tyr Ile Leu Asp Tyr Leu Arg
 50 55 60

Asp Leu Gln Leu Val Leu Pro Asp Tyr Phe Pro Glu Arg Ser Arg Leu
 65 70 75 80

Gln Arg Glu Ala Glu Tyr Phe Glu Leu Pro Glu Leu Val Arg Arg Leu
 85 90 95

Gly Ala Pro Gln Gln
 100

<210> 14
 <211> 13
 <212> PRT
 <213> homo sapiens

<400> 14

Met Ala Leu Ala Asp Ser Thr Arg Gly Leu Pro Asn Gly

1 5 10

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<210> 15
<211> 13
<212> PRT
<213> homo sapiens
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<400> 15

Gly Gln Val Tyr Val Thr Arg Arg Cys Thr Val Val Ser
1 5 10

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<210> 16
<211> 13
<212> PRT
<213> homo sapiens
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<400> 16

Pro Gly Pro Pro Pro Ser Arg Arg Gly Val His Lys Glu
1 5 10

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<210> 17
<211> 13
<212> PRT
<213> homo sapiens
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<400> 17

Gln Ser Leu Asp Gly Ser Arg Arg Ser Gly Tyr Ile Thr
1 5 10

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<210> 18
<211> 13
<212> PRT
<213> homo sapiens
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<400> 18

Pro Pro Glu Arg Tyr Thr Ser Arg Tyr Tyr Leu Lys Phe
1 5 10

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<210> 19
<211> 18
<212> PRT
<213> homo sapiens
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<400> 19

Phe Pro Glu Arg Ser Arg Leu Gln Arg Glu Ala Glu Tyr Phe Glu Leu
1 5 10 15

Pro Glu

$\langle 210 \rangle$	20
$\langle 211 \rangle$	14

<212> PRT
 <213> homo sapiens

<400> 20

Phe Gly Asp Thr Leu Asn Glu Ser Arg Asp Pro Asp Arg Pro
 1 5 10

<210> 21
 <211> 20
 <212> PRT
 <213> homo sapiens

<400> 21

Leu Ser Glu Ser Gly Phe His Met Val Ala Cys Ser Ser Thr Gly Thr
 1 5 10 15

Cys Ala Phe Ala
 20

<210> 22
 <211> 8
 <212> PRT
 <213> bacteriophage T7

<400> 22

Asp Tyr Lys Asp Asp Asp Asp Lys
 1 5

<210> 23
 <211> 733
 <212> DNA
 <213> homo sapiens

<400> 23

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tctcccggac tcttgaggtc acatgcgtgg tgggtggacgt aagccacgaa gaccctgagg      180
tcaagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg      240
aggagcagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact      300
ggctgaatgg caaggagtac aagtgaagg tctccaacaa agccctccca acccccatcg      360
agaaaaccat ctcaaagcc aaagggcagc cccgagaacc acaggtgtac accctgcccc      420
catcccggga tgagctgacc aagaaccagg tcagcctgac ctgcctgggtc aaaggcttct      480
atccaagcga catgcctgtg gagtgggaga gcaatgggca gccggagaac aactacaaga      540
ccacgcctcc cgtgctggac tccgacggct ctttcttct ctacagcaag ctcaccgtgg      600

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acaagagcag gtggcagcag gggaacgtct tctcatgctc cgtgatgcat gaggctctgc 660
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 gactctagag gat 733

<210> 24
 <211> 39
 <212> DNA
 <213> Homo sapiens

<400> 24
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<210> 25
 <211> 37
 <212> DNA
 <213> Homo sapiens

<400> 25
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<210> 26
 <211> 39
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 <213> Homo sapiens

<400> 26
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<210> 27
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 <212> DNA
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<400> 27
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<210> 28
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 <212> DNA
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<400> 28
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<210> 29
 <211> 23
 <212> DNA
 <213> Homo sapiens

<400> 29
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<210> 30
 <211> 23
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Gln Glu Ser Lys Cys His Leu Ile Glu Thr Asn Ile Arg Asp Gln Glu
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Glu Leu Lys Gly Lys Lys Val Pro Gln Tyr Pro Cys Leu Trp Val Asn
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Val Ser Ala Ala Gly Arg Trp Ala Val Leu Tyr His Thr Glu Asp Thr
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Arg Asp Gln Asn Gln Gln Cys Ser Tyr Ile Pro Gly Ser Val Asp Asn
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Tyr Gln Thr Ala Arg Ala Asp Val Glu Lys Val Arg Ala Lys Phe Gln
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Glu Gln Gln Val Phe Tyr Cys Phe Ser Ala Pro Arg Gly Asn Glu Thr

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Phe Ser Gly Arg Met Glu Val Leu Thr Asp Ser Glu Gly Trp Ile Leu
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Ile Asp Arg Cys Gly Asn His Phe Gly Ile Ile Leu Asn Tyr Leu Arg
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Asp Gly Thr Val Pro Leu Pro Glu Thr Asn Lys Glu Ile Ala Glu Leu
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Leu Ala Glu Ala Lys Tyr Tyr Cys Ile Thr Glu Leu Ala Ile Ser Cys
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Ser Tyr Thr Ser Thr Ser Asp Asp Asn Leu Leu Lys Asn Ile Glu Leu
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